AFTER ACTION REVIEW (AAR)

GUIDELINES FOR THE AAR

Purpose

The After Action Review (AAR) is a post-shift crew debrief that incorporates and integrates both technical and human factors information. The AAR:

- Is the primary tool for incorporating the action's (day's) events into the learning cycle.
- Provides a forum for determining the roots of crew performance successes and failures. In the event of failure, it provides a forum for developing strategies for mitigating causal factors in the future.
- Assists in establishing a common crew perception of the events of the day.
- Provides practice for crew communication and for conflict resolution between team members.
- Provides a place to establish, emphasize, and reinforce group "norms".

What

The AAR should detail the actions of the crew during the action (day). Technical, operational, and human elements of the "crew performance" should be discussed as appropriate. Both good and performance should be addressed and analyzed. The content of each AAR may vary widely, depending upon the events. Subjects discussed or mentioned during an AAR could include:

- Technical performance
- Equipment performance
- Techniques used
- Lessons learned
- Planning
- Communication of directions, events, changes, etc.
- Perception of events
- Procedures adherence
- Communication
- Environmental attributes or changes
- Environmental differences or problems
- Coordination
- Stress impacts
- Attitude impacts
- Fatigue impacts
- Safety concerns
- Questions and answers
- Roles and Responsibilities
- Adapting
- Organizational issues (cultural problems) as they impact the team, and as far as they can develop strategies to compensate or adapt to the changes
- Environmental indicators

The AAR should answer the following questions at a minimum (see AAR format for more details):

1. What was planned?
2. What really happened?
3. Why did it happen?
4. What can we do?

Some days are more exciting than others, and the AAR should reflect this reality. As a crew leader, you will need to focus the AAR to make it effective, and "all business." Adjust the content of the AAR for the events of the day, but don't assume nothing happens on a "quiet day" - a crew can fall down on quiet days as easily as busy ones. (low stress can breed complacency). Keep it straight forward, focused as possible, and all business.

Some Don'ts:

- Don't over-analyze the day's events. Short of a catastrophic problem that really needs to be torn down and examined, discuss only the most important factors and move along. In some cases, you may need to guide or limit the discussion so that it does not get too deep or convoluted.
- Don't allow the AAR to bog down with trivia or unnecessary details that do not relate to the crew's actions and events. If nothing happened today, don't feel obligated to extract a 30-minute debrief from it.

When

The AAR is a learning tool. Time the AAR so that it occurs when your crew is ready and able to learn. As a leader/supervisor, you need to plan the AAR so that it can be as effective as possible.

1. **End of the day**
   Generally, the AAR should be conducted immediately after the shift. This is the time when most things are still fresh in the mind both technically and emotionally. Unless the feelings associated with an event are very strong, crewmembers will not retain an emotional memory of it for very long.

EMOTION AND MEMORY
The *emotional* aspect of an experience is key if you want to discuss human factors performance, and it is important for effective adult learning. Most people will not "technically" remember that they were confused about a specific situation. This is an emotion, and the event is remembered within the context of that emotion. Terms like: "frustrated", "confused", "unsure", "apprehensive", & "pissed off" can indicate the emotional manifestation of a human factors breakdown. As time goes by, the emotional aspect of the event fades and the event itself can be lost or reduced to its technical aspect only.

2. **Split format**
   This format is the second-best choice when a full post-shift debrief cannot be implemented, for example, when you have a tired crew but also have important things to discuss. In the split format, the "*What really happened*?" part of the AAR is explored at the first opportunity, but the remaining part of the briefing is postponed until later. The "*What really happened*?" stage requires the most emotional recall, and focuses only on recalling the events of the action. Analysis and creative thinking are needed for the latter stages, and a crew with no mental energy will have difficulty with these. In this format, these stages are delayed until the crew is ready to learn.

3. **Start of the day (prior to morning briefing).**
   Many things from the day before will be retained and can be discussed in an AAR conducted the following morning. Beyond the propensity for memory loss, crewmembers are generally not going to be as interactive or awake. Although better than nothing, an AAR conducted in the morning is hard to get started and to keep moving.

4. **End of fire/assignment**
   Unlike the post-shift AAR, this AAR is usually is more academic and global in nature. Since most of the emotional aspect and much of the detail is missing. This type of briefing does not have to be conducted in the four-question AAR format. Since the post-shift AAR is concentrated on daily performance, the post-fire briefing may concentrate more on large events, operational procedures, shelved or organization-related issues.

Where

Obviously, the better the place you can hold an AAR, the better chance it will be productive. An AAR can be conducted nearly anywhere the crew has some privacy and all the crewmembers can hear and be heard. An AAR can take place on the line prior to departure, on the truck headed back to camp, or in a quiet spot at camp after dinner. It is more important THAT it is conducted - not WHERE it happens.

Formality

Make the AAR standard operating procedure for your team; as important as any other required activity. Informal conduct may threaten the importance of the AAR in the crew's eyes.

As any formal activity, make sure you have the time and the place to accomplish it effectively.

Confidentiality

Advocate and demonstrate privacy and confidentiality. What happened in the AAR, and who said what should stay within the confines of the AAR. Although specific information may come out as a result of the AAR, the details about what was said by individual crewmembers should be kept confidential.

This code of conduct should be strongly enforced, as it is the foundation of the effective AAR that enables all crewmembers to speak freely and confidently without fear of retribution or attribution. You can reinforce this conduct by:

- Selecting a private place to conduct the debrief
- Purposely removing or destroying drawings and other information that is used or constructed during the debrief
- Allowing other parties to view the AAR only if all crewmembers have given an OK and are comfortable with it.
- Reprimanding crewmembers that disclose inappropriate information concerning the AAR to others, or otherwise undermine the confidentiality of the AAR.

Issues that need to be brought to the attention of higher-ups should be done so independently by the crew boss or supervisor. Crew bosses and supervisors should try to concentrate and disclose the **WHAT** not the **WHO** of issues that need to be elevated from an AAR.

AAR FORMAT

The After Action Review should include AS A MINIMUM the following questions:

1. What was planned?
2. What really happened?
3. Why did it happen?
4. What can we do?

1. What was planned?

What were the goals/objectives?

- Incident action plan
- Crew incident goals
- Other crew goals
- Individual goals
- Were there additional unstated (informal) goals?

What barriers did we expect?

- Safety Hazards/Dangers identified in the IAP
- "Experience tells us" problems

2. What really happened?

"Discover" the events of the day through your crewmember's eyes. Collectively the crew probably knows what happened, but individually they may not. Use facilitation rather than lecture techniques to have the crew rebuild what happened on the line. Recount the day's events, and ask questions that promote and encourage crewmembers to fill in the blanks. In situations where you were the primary observer and decision-maker, help the crew fill in the blanks through your eyes and experiences. Add context and perspective where appropriate to make the situation clearer.

Ask questions. *Discover if there were times when the crew was unsure about what they we supposed to be doing, or what was going on (situation awareness). Ask specifically about anything you noticed during the day that might have hinted that there was such a time.*

Listen carefully. *Listen to the words, resolve inconsistencies and be an active listener.*

Examine your team's performance. Compare it against:

- Recognized standards for crew effectiveness. (see *Standards for Crew Effectiveness*)

- The key components of the decision model:

Recognition:	When was the problem realized and by whom? Were there indicators? If so, what were they? Was there information in the plan that keyed us to the presence of the indicators?
Situation Awareness:	Who was aware of the situation, and who was not? How was the problem communicated? Was there a difference in the way that crewmembers perceived the situation? If so, why? What was the REALITY of the situation? What resources were (should have been) used to fill in gaps in the information?
Option Development:	How effective was the selected option(s)? If formally discussed, what was the reasoning that led to the final decision? Was it valid?
Risk Assessment/Analysis:	Were the critical risks identified? If not, why? Were the risks weighed appropriately?
Action:	Was the action communicated to the crew effectively, timely, and clearly? How was the technical execution? How successful was the action at achieving the desired result?

Identify significant barriers

- Unanticipated barriers
- Team-related barriers (communication barriers, perception barriers, attitudes which presented barriers)
- Individual barriers (stress, fatigue, exhaustion, attitude)
- Did the team recognize and respond to problems well?

Examples:

- Did the team recognize a changing environmental factor or a Watch Out Situation?
  - Was it recognized when it occurred? If yes, what was working that enabled the team to stay safe? If no, what should (or could) have happened that didn't?
  - Did the team communicate the situation to all the affected crewmembers?
- Was the strategy used to combat the fire effective? If not, were there (in retrospect) indications that the course of action should have been reconsidered? If yes, were there indications that supported the strategy? Were these in the plan?
- Were there times when crewmembers were out of contact, or were unsure about the big picture? If so, what factors contributed to this situation? If not, what practices helped in keeping everyone on the same page?
- Were there external factors that helped or hindered the firefighting effort? How did the team respond to these factors? Was it possible to anticipate the change? Why?

ALWAYS discuss all non-textbook actions, especially:

- Where the crew and/or command did not use Standard Operating Procedures (SOP) to accomplish a task.
- Situations that resulted in safety violations, the loss of safety margins, or presented unnecessary risk.

Turn not-so-good actions and results into good lessons about what not to do, and good actions into an opportunity for advanced training. Be prepared to admit mistakes.

3. WHY did it happen?

Find the root causes behind identified performance successes and failures. In many cases, the crew's performance will contain both good and poor performance highlights. As a leader you should attempt to keep these balanced and in perspective. By providing this emphasis, you have an opportunity to teach your crewmembers some of your experience on prioritization of factors.

Successes

It is often much easier to determine the cause for a failure than for a success, and the natural tendency is to concentrate on what was wrong. The need to determine why a crew was successful or effective is just as important as discussing failures, as it these actions and behaviors you are trying to replicate in the future. For example, when:

- A situation was sized up correctly.
- A potentially dangerous change was noticed and communicated immediately.
- A maneuver or action was executed exactly as planned or taught.
- Someone had a good idea or an option about how to handle a situation.

These present good opportunities to reinforce behaviors, procedures, warnings, guidelines, or experiences that promote safety and effectiveness in your crew. Don't overlook these opportunities.

Failures

Inquiries and analysis should concentrate on **WHAT IS RIGHT**, not who is right. When a failure is identified, determine what **should** have happened, and secondly what didn't happen (or happened wrong).

Example: Out of Range

What seemed to have happened (perception):

A couple crewmembers get out of voice range. When the conditions changed and the crew needed to move, the leader has to send someone out to find the crewmembers and bring them back in before the crew could move out.

What really happened (reality):

All crewmembers were communicating less than usual all day. Many are tired from a poor night's sleep and were working "with their heads down". Two crewmembers drifted away out of voice range due to inattention of both the two crewmembers and the other crewmembers that were supposed to be communicating with them. Noise from the fire and the saws also contributed to the communications and SA problem. The leader noticed that the fire had started to move in a direction that could eventually endanger an escape route. Two missing crewmembers were noticed when the leader called for the team to get ready to move. The leader decided not to move the crew until all were accounted for.

The AAR is this situation could go many directions, and could encompass several different factors.

Possible areas for discussion:

Loosing contact with the two crewmembers - communication & fatigue

- *Standard communication procedures for crewmembers without radios.*
  - *How much of the crew was experiencing the same communications problems?*
  - *How many people didn't sleep well? (how widespread was the barrier)*
- *Situation awareness:*
  - *The two crewmembers*
    - *Did anyone notice or consider the position of the two crew members?*
    - *Who noticed the missing crewmembers? Was it communicated effectively?*
  - *The fire movement:*
    - *Who noticed the fire movement, and what were the indications that it could present a danger?*

The attack and subsequent withdraw

- *Was the crew up to the task? Physically? Mentally? Technically?*
- *Did the situation demand more effort than expected?*
- *Were there problems? Were they communicated?*
- *Did crewmembers notice changes in the fire behavior? If so, what was noticed and when? Was it communicated? Who was aware of it?*
- *Was there a better option than delaying the entire crew until the missing crewmembers returned?*
- *What was planned if the crewmembers did not come back right away?*
- *What were the criteria for moving vs. staying?*
- *Was a contingency plan sent with the crewmember that was sent to find the others?*

Individual Failures and Reprimands…

Identifying an individual crewmember's failure is permissible, as long as it goes to the source of the problem. The result needs to be pointed at what should have happened, not at the personal integrity of the individual(s) involved.

Personnel reprimands should be left out of the AAR, as such actions are disciplinary, not investigative in nature. (That is not to say, however, that a disciplinary action may need to be taken as a result of information that comes out of an AAR.)

4. What can we do?

Once you have identified the root causes, develop remedies that concentrate on improvement strategies. ***Avoid making up new procedures, rules, or processes unless absolutely necessary.*** In most cases the outputs from this section come in the form of enhanced recognition cues, and should be folded into the planning phase of the next action, keeping the "crew memory" intact.

Crew goals or objectives for improvement should be incorporated into the next day's planning session. Assist individual crewmembers to identify goals for their own improvement when necessary, and encourage crewmembers to help each other with these goals.

Example: Out of Range (cont.)

ID Root causes:	After discussion, this crew generally agreed that fatigue stemming from a hard couple of days and no good sleep played a significant role. Communications procedures were not followed closely, awareness was reduced on the part of the two crewmembers that moved out of range, and on the other crewmembers who were supposed to remain in contact with them. Leader was also slow to realize what had happened.
Strategies:	In this situation there may be an increased awareness of the dangers of fatigue for the team as a whole as a result of the debrief. If the advance indicators of the situation were identified, the crewmembers will also carry those indicators to the fire tomorrow. Individual strategies may be developed, especially on the part of the leader, who may modify the way these factors are weighed in the risk/benefit equation for this crew. These strategies should be incorporated into the next planning sessions if applicable.

Although the AAR is designed to construct a common crew-wide understanding of the day's events, individual crewmembers will still learn different things from the same incident or action. This is normal, expected, and necessary – as everyone is an individual. However, this learning will be centered from the common "fact" or "reality", and a group consensus on the action's results.

AAR BENEFITS

Some of the benefits for institutionalizing standardized and formal post-shift debriefs:

- Crewmembers acquire a more complete knowledge of both the technical and human factors problems that they confront, enabling them to develop plans for doing better in the face of these problems in the future.

- Crewmembers obtain a higher level of overall experience during the fire season because their experiences are constantly being evaluated for quality and correctness.

- Crews will be more adept at setting realistic and achievable performance goals.

- Team members gain confidence in both themselves and their teammates in taking corrective action when problems present themselves.

- Team members develop through discussion a common perspective or perception regarding the successes and/or problems that were encountered. This provides the team with a common experience base or reference point, from which they can build on in the future.

PRACTICE MAKES PERFECT

In the beginning, a crew WILL NOT debrief easily or well - it takes practice. After time, crewmembers will learn what to expect from an after action review, and will begin to use it to their advantage. DO NOT expect to debrief a serious failure unless your team has had practice working, trusting and talking about both technical and human factors issues in advance.

Finally, pain should be shared. After you have established the AAR as part of the team's culture, secondary crew leads should be given the opportunity to conduct AARs.

Again, practice makes perfect.

